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DEPARTMENT OF THE ARMY
HEADQUARTERS 23D ARTILLERY GROUP
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1.(C)Operations: Significant Activities.

a. During the period 1 May through 30 June 1970, the 23d Artillery Group continued to support Operation Rock Crusher in Cambodia. On 1 May 1970 the restriction against US artillery in Cambodia was lifted and Group fire units crossed the border to support the ARVN and US maneuver units during the remainder of the operation. In addition, the Group continued to provide medium artillery fires in general support throughout the III Corps Tactical Zone.

b. It became clear that there was inadequate tactical control of the many separate general support firing units in Cambodia. Had the ARVN direct support artillery been more closely integrated with and influential upon the ARVN task forces, it would have been adequate to assign tactical control of US Artillery batteries and platoons to the supported ARVN artillery units. However, the ARVN task force commanders at that time held the fire support coordination authority themselves; therefore, the supporting US artillery felt impelled to coordinate directly with the ARVN maneuver commanders or their US advisors. The problem of tactical control of US artillery was gradually solved by the consolidation of separate artillery platoons and batteries into battery groups, commanded either by the senior battery commander or by an assigned field grade officer. This commander was instrumental in coordinating the fire planning, local security, tactical convoys, and liaison functions for the collocated artillery elements (generally a medium and a heavy artillery battery, plus a countermortar radar detachment). Coordination and tactical control was much more effective in the cases of batteries supporting US maneuver units because of the ease of working with the US direct support artillery units. However, effective artillery battalion tactical control was not achieved until after US withdrawal from Cambodia.

c. There was a definite need to employ the artillery battalions as tactical control headquarters. This was accomplished in early July by orienting the battalions toward specific major maneuver units and their areas of operation, by gradually moving their organic batteries into these areas, and by assigning operational control (OPCON) to these battalions of other general support batteries which were in these same areas. Concurrently, 23d Artillery Group was enabled to focus its tactical control attention to the western and northern sections of Military Region 3

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(MR3, formerly III CTZ) and the Cambodian border region when II Field Force Artillery assumed operational control of two medium and one of its heavy artillery battalions in the southern and eastern sections of MR3, the Group gaining OPCON of the two other heavy artillery battalions (6/27th Arty and 2/32 Arty) on 15 July 1970.

d. It was apparent during the US withdrawal from Cambodia that the ARVN target acquisition means required augmentation. Most readily available were the unmanned ground sensors planted in Cambodia by the US divisions. The Group established a dedicated telephone line from the 25th US Infantry Divisions's sensor readout station at Cu Chi to the 23d Arty Gp Forward TOC at Tay Ninh East (collocated with III ARVN Corps Forward TOC). Sensor activations in Cambodia were reported immediately to Group Forward, where they were analyzed, converted to appropriate fire missions, and sent to the firing battery in range via a quick fire channel monitored by the parent artillery battalion. This system was subsequently decentralized to 1/27 Arty, which collocated its forward TOC at Tay Ninh West with that of the 18th ARVN Division, which took over the Cambodian sector northwest of MR3. This sensor data was also passed from the US Artillery TOC to the ARVN maneuver unit G-2 for intelligence purposes. Coordination has been effected by the 23d Arty Gp to assume responsibility for engaging the unmanned ground sensor targets in Cambodia detected by the 1st Cav Division (AM) as well.

e. The 23d Arty Group also found it necessary to re-open other available intelligence channels. Particularly useful to date have been the agent reports provided by the 525th Military Intelligence Group. These agent reports provide target intelligence concerning VC and NVA units in range of the Group fire units in such detail that immediate fire planning is possible and, after appropriate military and political clearances are obtained, the targets are engaged. While follow-up surveillance has been difficult to acquire (visual reconnaissance by aircraft the following morning usually being negated by heavy foliage), there is some evidence provided by the agents themselves that at least some of the missions fired have been effective, e.g., a Z-shaped trench found destroyed, with damaged cooking utensils and bloody clothing in the area; a leader of a VC unit complaining of having to run to avoid the artillery fire; and an enemy unit seen arriving at a new area, exhausted and with some wounded by artillery sometime earlier. Requests for ground unit surveillance are rarely satisfied, since unless the enemy unit is already targeted, there are no uncommitted ground forces available in the area.

f. Upon withdrawal from Cambodia, the 23d Arty Gp embarked upon an active countermortar program with the OPCON AN/MPQ-4 radar detachments to protect its fire support bases on the border. The defenses of FSBs Lanyard (XT075849) and Katum (XT333896) have been especially effective against distinctly different threats. The threat against FSB Lanyard, located in a small clearing along a road in heavily wooded War Zone C, consisted of hit-and run mortar attacks launched by units which apparently trekked into Vietnam from Cambodia for each attack. No attack was launched from the

same firing point, most attacks were detected and backplotted by the Q-4 radar located seven kilometers to the south at Thien Ngon (XT081816), and heavy countermortar fire on the firing site was usually achieved rapidly from FSB Lanyard. These fires could be grouped into three phases: reflexive response immediately against previous and likely firing points; area suppressive fire with Improved Conventional Munitions (ICM) against the detected site; and deliberate fire for destruction of the detected site using the Q-4 to adjust the artillery fire onto the identical grid. This technique, which provides an incentive to fire from a different position each time, is believed to have been largely responsible for the failure of the enemy mortar crews to place a single round (out of 76 fired in 6 attacks) inside the berm of the battery group at FSB Lanyard. The countermortar defense at Katum (XT333896) has been almost as effective, but personnel and equipment difficulties, coupled with the need to locate the Q-4 radar at the base, rather than overlooking it, failed to prevent some light casualties. The mortar threat at Katum has apparently come from units dug in with overhead protection and, in at least one case, with a forward observer located in a bunker about 100 meters ahead of the mortar position and in view of the FSB. As an added precaution, therefore, the heavy automatic weapons at Katum (twin 40mms and quad .50 cal MGs) habitually place suppressive fire along the tree line around the base whenever mortar fire is received in order to foil any observer.

g. The Group has also found the AN/TPS-25 radar to be an effective target acquisition device, particularly along the open lowlands around FSBs Blue (XT258290) and Elsenberg (XT113495). Engagement of these local targets (often 3-5 men) has been particularly effective with 8 inch ICM fire from these FSBs, although daylight surveillance afterwards rarely reveals more than some discarded military equipment or bloody trails. Efforts to detect movement after initial engagement have been unproductive to date, but longer after-action surveillance (until dawn) is now being attempted to detect the likely regroupment of the enemy.

h. A large number of non-optimum methods of fire against enemy personnel targets appeared within the Group, largely as a result of new and inexperienced fire direction officers being introduced into the firing batteries. To provide appropriate guidance, the Group published (Inclosure 1) a suggested method of engaging common types of personnel targets of various sizes and types of cover and concealment. In general, the effectiveness of surprise massed ICM and airburst HE fire against unprotected personnel was stressed. The previously mentioned agent reports were particularly useful in determining the cover and concealment habits of enemy units in the area.

i. In order to both emphasize and simplify the stringent requirements of the comprehensive ammunition supply rate (ASR) for artillery, the 23d Arty Group instituted a method of allocating the monthly ammunition to the commanders of the major supported maneuver units. By the daily situation report from the Group, each unit is kept informed of the

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artillery ammunition by type expended at its request by Group fire units, as well as the amount of ammunition remaining in its allocation. No problems have arisen from this technique and every maneuver unit commander appears to be satisfied by his particular monthly allocation, which he recognizes as his to expend as he sees fit. There has been no instance of excessive ammunition expenditure to date under this system.

j. The Group continues to participate in the Artillery Dong Tien (Forward Together) Program, although at a reduced level because of increased operational commitments of both US and ARVN units. The program has been particularly successful in the area of combined unit refresher training. Instruction has included training in fire direction, firing battery, survey, maintenance and communications. The Group has also been active in providing survey control to ARVN firing positions and conducting combined US/ARVN battalion and battery visits.

k. The Group continues to operate a combined US/ARVN Fire Support Coordination Center (CFSCC) in Binh Duong Province. The CFSCC provides fire support coordination and back-up air warning for all US and ARVN ground, naval and air forces operating in Binh Duong Province. In addition, US responsibility for two additional CFSCCs was assumed by the Group for Tay Ninh and Binh Long Provinces (2/32 Arty and 6/27 Arty, respectively).

l. A detailed summary of the operational activities of 23d Arty Group and its subordinate units follows: Headquarters 23d Arty Gp established for the Cambodian operations a Group Forward initially at Go Dau Ha (XT388252) on 23 April 1970 and subsequently at Tay Ninh on 5 May 1970 in order to remain with III ARVN Corps Forward. The Group Forward was organized to: provide coordination and control of US artillery; establish a Fire Support Element to serve as a clearing agency for all US artillery firing into Cambodia; coordinate unit moves; coordinate security of Fire Support Bases and convoys; and establish an Artillery and Air Strike Warning Control Center (AASWCC). Battery A/1/27 Arty was the first US artillery unit to cross into Cambodia this occurring on 6 May 1970. The firing batteries of TF 23d Gp made 32 moves during Phases I and II of the Cambodian operation (29 April through 6 May 1970). Phase III (7 through 12 May 1970) began with two task forces attacking north of Highway 1 and one task force conducting a detailed search of the Angel's Wing area for enemy caches. TF 318 and TF 333 moved on parallel axes as far north as Kampang Track (WT3673). Phase IV (13 through 21 may 1970) was highlighted with TF 318 conducting a deep, three pronged attack to the west, generally parallel to Highway 1. By the end of the second day, the TF had penetrated 40 kilometers into Cambodia and had begun search operations. TF 333 and TF 225 continues to operate east of Svay Rieng with Highway 1 as their common boundary. On 21 May 1970, TF 318 and TF 333 were ordered to prepare for operations north of the Dog's Head area (WT90800). The purpose of Phase V (23 May - 30 June 70) was to relieve the siege of Kampong Cham, a key Cambodian province capital of the Mekong River, approximately 50km northeast of Phnom Penh, which had been under siege for several weeks by elements of the 9th VC Division operating out of the Chup Rubber Plantation. TF 225 and the CIDG were to

continue operations in the Angel's Wing south to the tip of the Parrot's Beak and west to the Prek River. TF 225 continued to operate in this area for the remainder of this reporting period with only minor AO changes. By 1 June the siege of Kampong Cham had been broken and significant Cambodian reinforcements had arrived to defend the city from those enemy forces remaining. Consequently, all TF elements concentrated on eliminating enemy cache sites in their areas of operation. This was now the major effort for the first 20 days of June. TF 225 was able to remain in the field by alternating infantry regiments of the 25th ARVN Division. The other two task forces, having no similar reserve, were successively rotated to South Vietnam for maintenance and refitting. The units of TF 318 departed the Chup area on 3 June for an eight day maintenance standown at their home stations. On 12 June, TF 318 again moved north across the border, this time into the Krek Rubber Plantation, TF 333 followed TF 318 out of Cambodia on 5 June, travelled south through Tay Ninh, and after an overnight stop, again teamed up with TF 225 in the Svay Rieng - Praso - Chipha area. Each battalion of TF 333 was given a separate AO for more thorough search operations. During the period 1-20 June the enemy, having withdrawn his main force units, refused to engage in decisive combat. When contact was made, it was usually with rear area service units of squad or platoon size, upon whose shoulder the defense of the cache sites fell. These elements were quickly defeated whenever engaged and ARVN casualties were limited primarily to those caused by booby traps and mines. Two bridges along QL 1 were heavily damaged by demolition teams, including the bridge over the Prek Cham River at Svay Rieng. Indirect fire attacks on friendly night defensive positions (NDP) became regular. The South Vietnamese continued saturation patrolling and started airlifting troops by helicopter into areas that were inaccessible to armored task forces. During the period 15-20 June, the 9th VC Division reentered the Chup Rubber Plantation and once again challenged Kampong Cham and Prey Veng to the south. As a result, TF 318 again attacked the enemy in the vicinity of the Chup Rubber Plantation; TF 333 later reentered Cambodia and assumed responsibility for TF 318's former AO. Phase V closed with the withdrawal of all US personnel from Cambodia. The remaining six batteries of TF 23d Gp were withdrawn to preselected locations in Vietnam on 28 June 1970. The last personnel of TF 23d Gp were withdrawn on 29 June 1970, when the two remaining liaison teams returned to Vietnam and the Group Commander returned from visits with the commanders of TF 225 and TF 333, during which arrangements for US artillery support after 30 June 1970 were coordinated. In order to provide continued support of the ARVN Task forces that remained in Cambodia, TF 23d Gp was reorganized and redeployed to positions in RVN generally along the Cambodian border from the Parrot's Beak to the Fish Hook. Operation Rock Crusher was terminated on 301800H June 1970. During Operation Rock Crusher the 23d Artillery Group Forward controlled between two and twelve firing elements. These units made a total of ninety tactical moves and expended more than 26,000 rounds of artillery ammunition on 1048 fire missions in support of the operation. Units of the Task Force were credited with a total of 236 killed by artillery (KB ARTY) while suffering a total of one KIA and 36 WIA. There were five enemy ground attacks against TF 23d Gp units, plus a number of standoff rocket and mortar attacks.

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The Artillery fire planning in support of Operation Rock Crusher was primarily involved with preparations fired prior to ground assaults. The fire plans which were issued by the ARVN were detailed and followed the format prescribed by the appropriate US field manuals. The schedule of fires for US artillery units was prepared by the Group Forward CP. Due to the positioning of the artillery, the number of targets assigned, and a requirement to fire mixed calibers on each grid, some difficulties were encountered in developing an acceptable schedule of fires. The mixed calibers requirement resulted in a decrease in the total volume of fire due to the time needed to re-lay the heavy artillery. In addition, the advantage of surprise was sacrificed in some cases because it was not possible to fire all desired calibers on the same grid at the same time. Artillery fire plans could not be prepared and distributed to support day-to-day operations because decisions on the scheme of maneuver for the following day were not finalized until late at night. The US artillery was infrequently used to support contact missions. Throughout the operation the TF commanders displayed a preference for helicopter and tactical air strikes over the use of artillery, in spite of the time delays often encountered. The initial rules of engagement for Cambodia were identical to the rules of engagement for Vietnam, except that III ARVN Corps had to approve all firing into Cambodia. A time lag was experienced in obtaining these clearances. This was later remedied by giving clearance authority to the task force commanders. Because of local security considerations, reconnaissance of new firing positions was often made from the air by helicopter. An advance party was then sent with the lead elements of the Task Force convoy, permitting hasty preparations to be made to receive the firing battery in perhaps 30 to 40 minutes. Unplanned occupations of emergency positions were frequently required enroute. Units rarely established survey control until after occupying a position. Directional control was usually established by the use of astronomical observation and the grid location was obtained by a map spot. Units encountered no difficulties in locating an easily identifiable terrain feature within 2000 meters of their battery positions. Map data (1:50,000) in areas where US artillery units operated proved to be very accurate. Where possible AN/MPQ-4 radars were collocated with the artillery batteries. In addition, the radars were used to extend survey control from one battery position to another by observing rounds fired from the new position and backplotting their origin. This method of extending survey control proved to be very useful when batteries were quickly displaced for a short period to cover a particular operation.

m. Separate reports for each of the organic battalions of the Group contain a detailed chronology of their activities during the reporting period. On 15 July 1970, the 2/32 Arty, 6/27 Arty and B/7/8 Arty were placed under the operational control of the Group. The ORLL for these units has been forwarded separately as organic units of IIFFORCEV Arty. Operation of the 23d Arty Gp Fwd at Tay Ninh (XT141521) was terminated on 17 July 1970. At this time command and control was decentralized to the battalions exercising tactical control of the Group fire units north

nd west of Tay Ninh (1/27 Arty and 2/32 Arty respectively). The 1/27 Arty also assumed responsibility for the Tay Ninh AAGWCC and the US portion of the Tay Ninh Sector CFSCC.

n. Ammunition Expenditures (1 May through 31 July 1970:

UNIT	NR MISSIONS	ROUNDS EXPENDED
2/12	12,062	54,435
1/27	3,731	28,596
2/35	3,476	22,198
5/42	4,565	25,223
2/32 - 8"	665	1,715
175	631	1,646
6/27 - 8"	561	805
175	824	1,297
B/7/8- 8"	161	611
175	168	295
Total	26,844	136,811

o. Personnel Significant Activities:

(1) Casualties: There were 0 KIA and 14 WIA in this quarter. Non-hostile casualties: There were 2 deaths and 41 injuries in this quarter.

(2) At the close of the period, the following critical personnel shortages existed:

MOS	AUTH	ASG	PCT
05B20 Radio Operator	8	4	50
13B20 Field Arty Crewman	72	31	43
13B40 Arty Crewman	186	155	83
13E40 Chief FDC Computer	44	21	48
35D20 Metro Equipment Repairman	4	3	75
36K20 Field Wireman	158	115	73
63C40 Track Mech, Mtr Sgt	10	8	80
71T20 Maint Data Clerk	21	7	33
76Y40 Supply Sgt	25	19	75

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p. Intelligence:

(1) Visual Reconnaissance: As of 16 July 1970 the number of aircraft allocated to the Group daily for visual reconnaissance missions was increased from two to four. The Group flew a total of 275 visual reconnaissance missions during this quarter, compared to 330 visual reconnaissance missions during the previous quarter. This decrease is attributable both to the temporary reduction of sorties and to adverse weather (Southwest Monsoon).

(2) Radars: On 2 July 1970 the group assumed operational control of three AN/MPQ-4A radar detachments, the 246th, 248th, and 259th. On 14 July the Group assumed operational control of the 1st Ground Surveillance Radar Detachment (AN/TPS-25). The AN/MPQ-4A radar detachments located three mortar firing positions during July. The AN/TPS-25 radar detachment located 95 targets, of which 32 were engaged with artillery fire. Total down time for all radars was 28 hours, and total operating hours were 2170.

q. Logistics:

(1) After completing the first week of operations in Cambodia, the need for S4 representation at the Group Forward TOC became apparent. A minimum of two individuals were required in the S4 element during the entire operation, one to handle major projects, and another to handle routing resupply matters.

(2) Other functions coordinated by the S4 representatives were engineer support, convoys, maintenance activities, and procurement of additional transport, LTR's and wreckers for Group units.

r. Aviation:

(1) The 23d Artillery Group Aviation Section continues to operate the consolidated OH-58 assets of II Field Force Artillery.

(2) During the reporting period the U-6A was turned in. All fixed wing missions formerly flown by the U-6A were accomplished either by the organic OH-58A helicopters or GS aircraft furnished by higher headquarters.

(3) The breakdown of missions flown by the 18 organic OH-58A's is as follows:

Command and Control	3542
Visual Reconnaissance	343
Troop Carrier	4740
Cargo Carrier	403
Training	506

Maintenance	100
Total Sorties	9634
Total Passengers	9084
Total Cargo	155 Tons

s. Medicine:

(1) During the reporting period there was a 25% increase in respiratory diseases and a 35% increase in skin diseases. The rate of incidence of these diseases normally increases with the onset of the wet weather of the Southwest monsoon.

(2) Venereal Disease showed a 22% decline this quarter as compared with the first quarter of the year, possibly due to the increased tempo of operations. During the quarter heavy emphasis was placed on education of the troops to the hazards of venereal diseases and may have some impact.

(3) No animal bites were reported during this quarter as compared with 11 in the last quarter.

t. Civil Affairs: During the past quarter 63 MEDCAPS were conducted for a total of 4,396 patients. In addition, a total of 5,200 pounds of surplus food was distributed. Institutions assisted during the reporting period were as follows:

Schools (5)

Hospitals/Dispensaries (4)

Boy Scouts (1)

u. Signal: To maintain communications with the assigned and OPCON battalions, a number of communications relays were established on key terrain features. These relays were established on the three highest mountains in the Third Military Region, Nui Ba Den (XT281528), Nui Ba Ra (YT183068), and Nui Chua Chan (YT606101). Their use greatly assisted the FM communications of the Group units. The Group continues to make effective use of its automatic and automatic secure relays at these sites.

2. Lessons Learned: Commander's Observation, Evaluation, and Recommendations.

a. Artillery General Support of ARVN.

(1) OBSERVATION: ARVN task force commanders in Cambodia tended not to make full use of their supporting artillery; attempts to provide the necessary quantity and variety of US general support artillery directly to the ARVN maneuver commander resulted in span of control problems.

(2) EVALUATION: The task force commanders acted as their own fire support coordinators. The ARVN direct support artillery commanders at the time were not influential in "selling" artillery support, even when it was the most responsive and effective fire support means available. By consolidating the US general support artillery units into battery groups and representing the consolidated units directly to the task force commanders or their US advisors, some improvement in the day-to-day use of the general support artillery was achieved. In addition, local fire planning, coordination of tactical convoys, and organization of local security were effected by the battery group commanders. More extensive fire planning was provided the battery groups by the Group Forward.

(3) RECOMMENDATIONS:

(a) ARVN maneuver unit and artillery commanders should be further advised of the techniques and advantages of US artillery fire support coordination.

(b) Artillery battalion headquarters should be employed whenever available for tactical control of multiple general supporting batteries to reduce the span of control problems of group headquarters.

(c) When battalion tactical control headquarters are not available, the technique of collocating artillery platoons and batteries into battery groups, each having a single tactical commander, should be considered as a means of reducing Group span of control problems.

b. Tactical Control of General Support Artillery.

(1) OBSERVATION: The general support of many major maneuver units with fewer medium and heavy artillery battalions on a widely dispersed battlefield posed severe problems in tactical control and coordination.

(2) EVALUATION: In Military Region 3, there are four medium and three composite heavy artillery battalions available to provide general support to some ten division and brigade size maneuver units, each of which operates relatively independently on a widely dispersed battlefield. In addition, the territorial forces of ten provinces represent an additional demand for artillery support on an irregular basis. General support firing batteries are rarely within mutually supporting range. US direct support artillery battalions provide effective fire control of GS batteries in their particular areas of interest, but fire control by ARVN and territorial forces is less effective. In addition, there are targets outside the normal areas of interest of the main force units which require engagement, notably targets detected near the Cambodian border by various sensors and small enemy forces located by agents and not immediately targeted by ground forces. Tactical control has been effectively achieved in these difficult circumstances by orienting each battalion on one or two major maneuver units and

their AO's for tactical control and coordination pruposes. While this often requires assigning operational control of different types of artillery batteries, no unusual difficulties have been experienced. An added benefit of this area orientation is that the Group has been able to focus upon the tactical control of the four battalions in the northern and western portions of MR3, and II Field Force Artillery, while maintaining overall control, has assumed tactical control of the three battalions in the less active south and east sectors. Formerly, the Group controlled its four assigned medium battalions over the entire MR3, while II Field Forces Artillery controlled the composite heavy battalions over the same area.

(3) RECOMMENDATION: This method of artillery organization should be used as an example of achieving effective control of general support artillery on a widely dispersed battlefield.

c. Unmanned Ground Sensors.

(1) OBSERVATION: Unmanned ground sensors can provide useful all-weather target acquisition data in jungle areas where other means are denied.

(2) EVALUATION: Upon withdrawal of US forces from Cambodia at the end of June 1970, acquisition of enemy targets in the vicinity of the border was greatly limited. With no maneuver forces in the area and with other target acquisition means relatively ineffective in the dense forests the unmanned ground sensors left behind by US forces became the primary source of near real-time target information. By connecting the sensor readout station directly to an artillery control headquarters (employing either dedicated wire line or a radio circuit), and by establishing quick-fire channels and procedures from that headquarters to the firing batteries, timely artillery engagement of the targets detected in the vicinity of the sensors was achieved. A considerable amount of analysis and planning is required to place artillery fire on the likely target location (Usually offset from the particular sensor position) at a time following activation of that sensor. Heavy self-propelled artillery is especially difficult to bring to bear on the moving targets which lie outside the primary sector of fire. The restrictive characteristics of jungle trails, the faster response time of light and medium artillery, and the large area of target coverage by Improved Conventional Munitions are factors which tend to simplify the fire control problem. An additional benefit received from these sensor fields is the cumulative intelligence that can be developed, both for inducing additional target locations and for indicating general enemy activities.

(3) RECOMMENDATIONS.

(a) Unmanned ground sensors should be made a standard means of target acquisition, with data made available to artillery units on a near real-time basis.

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(b) Improved techniques for exploiting unmanned ground sensor data should be developed and incorporated into US artillery doctrine and training.

d. Countermortar Operations.

(1) OBSERVATION: Repeated enemy attempts to mortar fire support bases near the Cambodian border required the development of a comprehensive countermortar program.

(2) EVALUATION: The enemy employed two basically different but persistent methods of mortar attack - - strike-and-run (at FSB Lanyard) and strike-and-hide (at FSB Katum). The AN/MPQ-4 countermortar radar under the tactical control of the battery group at FSB Lanyard was emplaced 7 km to the south in a protected camp, thereby establishing "umbrella coverage" over the base. Two adjacent surveillance sectors were employed, each of which included the base at the edge of the sector. The eastern sector was observed more frequently, since most mortar attacks originated from that side. The coverage over the fire support base had the distinct advantage of including every firing point employed by the enemy against FSB Lanyard. If the radar crew did not detect the first ascending mortar rounds, they would at least see them on the descending leg of the trajectory near the defended area and could immediately shift to the alternate sector. The lack of a nearby defended area however, precluded this offset method of radar employment at Katum. The limited sector of scan was much more critical and required an aggressive intelligence effort to determine the likely mortar firing sites. When incoming fire was received that was not detected by the radar, special emphasis was placed upon crater analysis to obtain at least the backazimuth of fire, as well as the approximate range and type of weapon employed (usually 82mm mortar). Based upon the data developed, the assigned radar scan sector was progressively refined to the point that most of the brief attacks were observed and backplotted. With either type of radar siting, the battery group countermortar program developed into three phases: reflexive response against previous or suspected mortar positions; area suppression of the detected mortar location; and finally, deliberate destruction fire, adjusted onto the detected mortar location by radar spotting of each countermortar volley fired. The first phase, though probably inaccurate, was apparently heard by the enemy mortar crew, causing them to cease fire and either displace or hide. The second phase was intended to inflict casualties on those mortar crews which elected to run, as well as to fix those which elected to hide under cover. The third phase was fired to destroy any materiel or personnel that stayed in the original firing position, regardless of the degree of protection that might have been prepared beforehand. Limited surveillance means rarely revealed the actual results of these countermortar efforts, but the long term enemy performance may be indicative of the actual effect achieved. In the case of FSB Lanyard, no attack ever emanated from the same grid twice; however, no enemy mortar rounds ever landed within the defended perimeter, either. The difficulty of locating each new firing position in the dense woods, coupled with the directional problem each time, may have been too much of a disadvantage for the enemy gunners to overcome. In the case of Katum, enemy accuracy was initially poor, but improved until light casualties were

AVGE 25 August 1970
SUBJECT: Operations Report - Lessons Learned of Headquarters, 23d Artillery Group, Period Ending 31 Jul 70, RCS-CSFOR - 65 (R2)

inflicted; multiple attacks during the night became common. After the three phase countermortar program was initiated, however, mortar attacks virtually ceased.

(2) RECOMMENDATIONS:

(a) The three phase countermortar program developed by 23d Arty Group should be used as an example of a successful countermortar technique in the appropriate field artillery courses.

(b) The offset countermortar radar siting technique should be taught as a preferred method of employment of the AN/MPQ-4 type equipment.

(c) An omni-azimuth countermortar radar should be developed for US artillery use.

e. Anti-personnel radar operations.

(1) OBSERVATION: The tower-mounted AN/TPS-25 radar provides an excellent target acquisition capability against enemy personnel in the dark, whether in rice paddies or low brush or woods.

(2) EVALUATION: At FSBs Blue and Elsenberg, on the Cambodian border, the tower-mounted AN/TPS-25 radars usually detected several personnel targets each night. After curfew hours, when the ambush patrols of the RF/PF territorial forces had been established, these unidentified personnel targets were considered hostile. If both political and military clearances were granted, these targets would be engaged, either with Improved Conventional Munitions (ICM) or, if the potential bomblet duds presented a daylight hazard to civilian or military traffic, with VT ammunition (for maximun conventional anti-personnel effect and to preclude civilian crop damage). Because of the time delay required for computation of firing data and obtaining the necessary clearances, a final check of the radar target grid was made just before firing, and special corrections for deflection and quadrant were applied if necessary. After engagement, target activity usually ceased. Special precautions were taken to observe the target area for additional movement at frequent intervals until ground surveillance could be made, usually after daylight. As a general rule no target regroupment was detected, but only discarded equipment, bloody clothing, and body drag marks were found later in the areas of target engagement.

(3) RECOMMENDATION: Improved techniques of anti-personnel detection and engagement should be developed, to include means for more effectively detecting personnel target regroupment and withdrawal.

1 Incl
as

WILLIAM L. LEMNITZER
Colonel, FA
Commanding

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AVFB-FAC (25 Aug 70) 1st Ind
SUBJECT: Operational Report - Lessons Learned of Headquarters, 23d Artillery Group, Period Ending 31 Jul 70, RCS CSFOR - 65 (R)

DA, HEADQUARTERS, II FIELD FORCE VIETNAM ARTILLERY, APO 96266 5 SEP 1970

TO: Commanding General, II Field Force Vietnam, APO 96266

Concur, with the exception of paragraph 2c (3), page 11. Unmanned ground sensors may provide accurate enough information concerning possible artillery targets. However, the inaccuracy of the system in two areas considerably decreases accurate targeting. These two areas are: insufficient accuracy in actual location of the sensor for artillery fires; and the sensor's activation caused by other than human or vehicular movement, i.e., animals or weather. Assuming all sensor targets to be enemy, as opposed to animal or weather initiated sensings, would result in wasteful expenditure of ammunition. It would be more appropriate to consider unmanned ground sensors as another intelligence gathering means, and in those cases where exact sensor locations are known, artillery fire may be delivered.

FOR THE COMMANDER:

Victor F. Kelly
Major, FA
Adjutant

AVFBC-RE (25 Aug 70) 2nd Ind
SUBJECT: Operational Report - Lessons Learned of Headquarters, 23rd Artillery Group, Period Ending 31 July 1970, RCS CSFOR-65 (R2)(U)

DA, HQ, II Field Force Vietnam, APO San Francisco 96266 14 SEP 1970

THRU: Commanding General, US Army Vietnam, ATTN: AVHGC-DST, APO 96375

Commander-In-Chief, US Army Pacific, ATTN: GPOP-DT, APO 96538

TO: Assistant Chief of Staff for Force Development, Department of the Army, Washington, D.C. 20310

1. (U) This headquarters has reviewed the Operational Report - Lessons Learned for the quarterly period ending 31 July 1970 from 23rd Artillery Group and concurs with the comments of the indorsing headquarters.

2. (C) Comment follows: Reference item concerning "Unmanned Ground Sensors", page 11, paragraph 2c. Concur. However, it should be borne in mind that unattended ground sensors are only one source of intelligence gathering means available to a unit. Employing artillery fire on all sensor activations in an indiscriminate manner would result in a wasteful expenditure of ammunition and probably not produce optimum results. Ground sensor activations should be used in conjunction with other intelligence factors to build a complete intelligence picture. In cases where ground sensor activations are the only intelligence available to a unit, the decision to fire artillery, or employ some other type of response, should be left to the unit commander, or the sensor control officer.

FOR THE COMMANDER:

W. C. BARTEL, JR.
CPT, AGC
Asst AG

AVHAT-OPS (25 Aug 70) 3d Ind
SUBJECT: Operational Report-Lessons Learned of Headquarters, 23d Artillery Group, Period Ending 31 Jul 70, RCS-CSFOR - 65 (R2)

Headquarters, United States Army Vietnam, APO San Francisco 96375

TO: Commander in Chief, United States Army Pacific, ATTN: GPOP-DT, APO 96558

This Headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 July 1970 from Headquarters, 23d Artillery Group and concurs with comments of indorsing headquarters.

FOR THE COMMANDER:

Clair W Steve s, Jr.
[illegible]
Assistant Adjutant General

Cy furn:
II FFORCEV
23d Arty Gp

GPOP-DT (25 Aug 70) 4th Ind (U)
SUBJECT: Operational Report-Lessons Learned, HQ, 23d Artillery Group, for the Period Ending 31 July 1970, RCS CSFOR-65 (R2) (U)

HQ, US Army, Pacific, APO San Francisco 96558 30 OCT 1970

TO: Assistant Chief of Staff for Force Development, Department of the Army, Washington, D. C. 20310

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:

L.M. [illegible]
CPT, AGC
Asst AG

SUGGESTED METHODS OF ENGAGEMENT OF TYPICAL TARGETS 1/

155 HOWITZER BATTERY

NATURE OF TGT (# OF PERSONNEL)	TERRAIN	MOF PREFFERRED (IF CONSTRAINTS PERMIT 2/)	GENERAL USE	ALTERNATE
Squad (2-10)	Open or Brush	Btry, Shell ICM, (1)	Btry, Fz VT, (1)	Btry, Fz Ti, (1)
	Woods, Single & Double Canopy jungle	Btry, Shell ICM, (1)	Btry, Fz Ti, (1)	Btry, Fz [illegible], (1)
	Triple Canopy Jungle	Btry, Shell ICM, (1)	Btry, High Angle, Fz Delay, (1)	Btry, Fz Delay, (1)
Platoon (11-30)	Open or Brush	Btry, Shell ICM, (2)	Btry, Fz VT, (2)	Btry, Fz Ti, (2)
	Woods, Single & Double Canopy Jungle	Btry, Shell ICM, (2)	Btry, Fz Ti, (2)	Btry, Fz [illegible], (2)
	Triple Canopy Jungle	Btry, Shell ICM, (2)	Btry, High Angle, Fz Delay, (2)	Btry, Fz Delay, (2)
Company (31-100) Yellow Jacket Tgts	Open or Brush	Btry, Open Sheaf 3[illegible], Shell ICM, (3), Range spread, 1C Apart	Btry, Open Sheaf, Fz VT, (3), Range spread, 1C Apart	Btry, Open sheaf, Fz Ti, (3), Range spread, 1C Apart
	Woods, Single & Double Canopy Jungle	Btry, Open Sheaf, Shell ICM, (3), Range spread 1C Apart	Btry, Open Sheaf, Fz Ti, (3), Range spread, 1C Apart	Btry, Open Sheaf, Fz [illegible], (3), Range Spread, 1C Apart
	Triple Canopy Jungle	Btry, Open Sheaf, Shell ICM, (3), Range Spread 1C Apart	Btry, High Angle, Open Sheaf, Fz Delay, (3), Range Spread, 1C Apart	Btry, Open Sheaf, Fz Delay, (3), Range Spread, 1C Apart
Battalion (101-300) (each Subtarget) 4/	Open or Brush	Btry, Open Sheaf, Shell ICM (3), Range Spread, 1C Apart	Btry, Open Sheaf, Fz VT, (3), Range Spread, 1C Apart	Btry, Open Sheaf, Fz Ti, (3), Range Spread, 1C Apart

NATURE OF TGT (OF PERSONNEL)	TERRAIN	MAJ PREFERRED (IF CONSTRAINTS PERMIT 2])	ALTERNATE	ALTERNATE
	Woods, Single & Double Canopy Jungle	Btry, Open Sheaf, Shell ICM, (3), Range Spread, 10 apart	Btry, Open Sheaf, Fz Q, (3), Range Spread, 10 apart	Btry, Open Sheaf, Fz Q, (3), Range Spread, 10 apart
	Triple Canopy Jungle	Btry, Open Sheaf, Shell ICM, (3), Range Spread, 10 apart	Btry, High Angle, Open Sheaf, Fz Delay (3), Range Spread, 10 apart	Btry, Open Sheaf, Fz Q, (3), Range Spread, 10 apart
Bunkers	Open or Brush	Btry, (2), 1st Volley ICM, 2nd Volley Fz Q.	Btry, (2), 1st Volley Fz VT, 2d Volley Fz Q.	Btry, (2), 1st Volley Fz T1, 2d Volley Fz Q.
	Woods, Single & Double Canopy Jungle	Btry, (2), 1st Volley ICM, 2d Volley Fz Delay	Btry, (2), 1st Volley Fz T1, 2d Volley Fz Delay	Btry, Fz Delay, (2)
	Triple Canopy	Btry, (3), 1st Volley ICM, Subsequent volleys High Angle, Fz Delay	Btry, High Angle, Fz Delay, (3)	Btry, Fz Delay (3)

1] The fire unit commander or fire direction officer may have additional information, upon which a more appropriate method of engagement might be selected.

2] Constraints on ICM use: ICM will not be used on interdiction (Category D) targets, should not be used if likely civilian use of area might result in undue casualties from dud bomblets; available supply rate (ASR) for artillery ammunition may be limiting; or maneuver force commander may have imposed restrictions.

3] Open sheaf is 200-250 meters wide for 5-6 tube battery.

4] Break up into subtargets (200 x 200 meters), using map inspection and other information to estimate likely dispersion pattern; assume approximately 100 personnel occupying each 200 x 200 meter area; method of fire as for each subtarget.

5] The initial volley for unmanned ground sensor, anti-personnel radar, and counter-mortar radar targets should always be ICM if constraints permit.

SUGGESTED METHODS OF ENGAGEMENT OF TYPICAL TARGETS 1/

175/8 PLATOON FIRE

NATURE OF TGT (# OF PERSONNEL)	TERRAIN	MOF PREFFERRED (IF CONSTRAINTS PERMIT 2/)	GENERAL USE	ALTERNATE
Sound (2-10)	Open or Brush	8"-Plt, Shell IcM, (1) 175mm-Plt, Fz VT, (1)	Plt, Fz VT, (1) Plt, Fz VT, (1)	Plt, Fz Ti, (1) Plt, Fz Q, (1)
	Woods, Single and double canopy jungle	8"-Plt, Shell IcM,(1) 175mm-Plt, Fz Q, (1)	Plt, Fz Ti, (1) Plt, Fz Q, (1)	Plt, Fz Q, (1)
	Triple canopy jungle	8"-Plt, Shell IcM,(1) 175mm-Plt, Fz Delay,(1)	Plt, High angle, Fz Delay,(1) Plt, Fz Delay, (1)	Plt, Fz Delay, (1)
Platoon (11-30)	Open or Brush	8"-Plt, Shell IcM, (2) 175mm-Plt, Fz VT, (2)	Plt, Fz VT,(2) Plt, Fz VT,(2)	Plt, Fz Ti, (2) Plt, Fz Q, (2)
	Woods, Single and double canopy jungle	8"-Plt, Shell IcM, (2) 175mm-Plt, Fz Q, (2)	Plt, Fz Ti, (2) Plt, Fz Q, (2)	Plt, Fz Q, (2)
	Triple canopy jungle	8"-Plt, Shell IcM, (2) 175mm Plt, Fz delay,(2)	Plt, High angle, Fz delay,(2) Plt, Fz delay (2)	Plt, Fz delay (2)
Company (31-100) Battalion 3/ (101-300) (each subtarget) Yellow Jacket Targets	Open or Brush	8"-Plt, open sheaf, Shell IcM, (3), range spread,10 apart 175mm-Plt, Open sheaf, Fz VT, (3), range spread,10 apart	Plt, Open sheaf, Fz VT, (3), range spread, 10 apart Plt, Open sheaf, Fz VT, (3), range spread, 10 apart	Plt, Open sheaf, Fz Ti, (3), range spread,10 apart Plt, Open sheaf, Fz Q, (3), range spread,10 apart
	Woods, Single and double canopy jungle	8"-Plt, Open sheaf, shell IcM, (3), range spread, 10 apart	Plt, Open sheaf, Fz Ti, (3), range spread,10 apart	Plt, Open sheaf, Fz Q, (3), range spread, 10 apart

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NATURE OF TGT (& OF PERSONNEL)	TERRAIN	MOF PREFFERED (IF CONSTRAINTS PERMIT 2)	GENERAL USE	ALTERNATE
		175mm-Plt, Open sheaf, Fz , (3), range spread, 1C apart	Plt, Open sheaf, Fz , (3), range spread, 1C apart	
	Triple canopy	8"-Plt, Open sheaf, shell ICM , (3), range spread, 1C apart	Plt, High angle, Open sheaf, Fz Delay, (3), range spread, 1C apart	Plt, Open sheaf Fz Delay, (3), range spread, 1C apart
		175mm-Plt, open sheaf, Fz Delay, (3), range spread, 1C apart	Plt, open sheaf, Fz Delay, (3), range spread, 1C apart	Plt, Open sheaf, Fz Delay, (3), range spread, 1C apart
Bunkers	Open or Brush	8"-Plt, (3), 1st volley ICM, subsequent volleys Fz Q	Plt, (3), 1st volley Fz VT, subsequent volleys Fz	Plt, (3), 1st volley Fz Ti, subsequent volleys Fz
		175mm-Plt, (3) 1st volley Fz VT, subsequent volleys Fz Q	Plt, (3), 1st volley Fz VT, subsequent volleys Fz	
	Woods, single and double canopy jungle	8"-Plt, (3), 1st volley ICM, subsequent volleys Fz Delay.	Plt, (3), 1st volley Fz Ti, subsequent volleys Fz Delay	Plt, Fz , (3)
		175mm-Plt, Fz Delay, (3)	Plt, Fz Delay, (3)	
	Triple canopy	8"-Plt, (3), 1st volley ICM, subsequent volleys high angle Fz Delay	Plt, High angle, Fz Delay, (3)	Plt, Fz Delay, (3)
		175mm-Plt, Fz Delay, (3)	Plt, Fz Delay, (3)	Plt, Fz Delay, (3)

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1 The fire unit commander or fire direction officer may have additional information, upon which a more appropriate method of engagement might be selected.

2) Constraints on ICM use: Will not be used on interdiction (Category E) targets; should not be used if likely civilian use of area might result in undue casualties from dud bomblets; available supply rate (ASR) for artillery ammunition may be limiting; or maneuver force commander may have imposed restrictions.

3 Open sheaf is 200 meters wide for 2 tube platoon.

4) Break up into subtargets (200 x 200 meters), using map inspection and other information to estimate likely dispersion pattern. Assume approximately 100 personnel occupying each 200 x 200 meter area; method of fire is for each subtarget.

5) The initial volley for unmanned ground sensor, anti-personnel radar, and countermortar radar targets should always be ICM, if constraints permit.

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